



Marine & Offshore

Certificate number: 31049/C0 BV

File number: AP4346

Product code: 4503H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

Axiomatic Technologies Corporation
Mississauga, ON - CANADA

for the type of product

SIGNAL ACQUISITION SYSTEMS
DIO module AXDIO 128 & AX030210 & CATAX031800

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships

EC Code: 31 for AXDIO128 and CATAX031800
33 for AX030210

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 10 Dec 2027

For Bureau Veritas Marine & Offshore,

At BV PORT EVERGLADES CENTRE, on 09 Aug 2023,

Flavio Rosas

This certificate was created electronically and is valid without signature



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

The AXDIO128, AX030210 and CATAX031800 are I/O Modules for Marine and Offshore application.

1.1 Main Characteristics of AXDIO128 :

Type	Description
Power	Supply voltage: 9-32V, Nominal: 12/24V DC
Digital Inputs	12 digital active-low inputs with pull up resistors
Relay Outputs	8 Form C relay outputs
CAN	SAE J1939, Baud rate: 250 kbit/sec
RS-232	1x RS-232 port, 115200 Baud rate
Protection	IP56, Pollution Degree rating per UL508
P/N	234-0275

Firmware	Details
P/N: 234-0275 ECO3	Bootloader: CAT_DIO_v0.7.3.hex, dated September 9, 2005. Application: 2340274_01.flc, dated September 9, 2005.

1.2 Main Characteristics of AX030210:

Type	Description
Power	Nominal: 12/24V DC
Inputs	10 Universal Signal Inputs, 1 Digital Input, 1 Resistive Input
Outputs	8 Analog Outputs, 1 Form C Relay Output
CAN	1 Isolated CAN (SAE J1939)
Protection	IP56
P/N	AX030210-xx, CATAX030210, 573-5839, 977000059

1.3 Main Characteristics of CATAX031800:

Type	Description
Power	Nominal: 12/24V DC
Inputs	12 digital active-low inputs with pull up resistors
Outputs	8 Form C relay outputs
CAN	1 Isolated CAN (SAE J1939) 250 kbit/sec
Protection	IP56
P/N	AX031800-XX, CATAX031800, 605-1984
Firmware	607-5097-XX Details: AF-20162-1.09.bin

2. DOCUMENTS AND DRAWINGS:

Axiomatic:

- User Manual UMAXDIO128 V3.0.0, dated October 22, 2015.
- Software Practices V1.0, dated July 17, 2012.
- Drawing N°AXDIO128-MD, dated April 30, 2012.
- Drawings Rev.6.0 and dated February 10, 2012.
- Drawing CAT171000B-MD - rev.B dated May 23, 2018.
- Potential Failure Mode and Effects Analysis dated February 8, 2012.
- FG Test Procedure for for 234-0275 (CAT171000) - rev.2.0, dated July 7, 2019
- Discrete I/O (DIO) Module USER MANUAL V 1.0.0, dated November 22, 2012.
- Technical Datasheet No. TDAX030210-MTA, dated July 24, 2023.
- Drawing N°AX030210-MD, dated July 27, 2018.
- Schematic drawings of AX03210 Rev.3.0 , dated September 30, 2019.
- Drawing N°CATAX031800-MD, rev.D1 - Part Rev 4.1, dated 27 Mar 2019.
- User manual UMCATAX031800, V 1.0.1, dated 25 Jan 2023.

3. TEST REPORTS:

Elite Electronic Engineering Inc.:

- Test Report N°1201614-01, dated September 13, 2012.
- Test Report N°1201612-03, dated September 18, 2012.
- Test Report N°1902125-01, dated October 9, 2019.
- Test Report N°1902126-01, dated October 4, 2019.
- Test Report N°2203471-03 Rev.A, dated March 31, 2023.
- Test Report N°2203472-01, dated February 23, 2023.

UltraTech Group of Labs:

- Test Report N°22ATC068_EC-42, dated June 20, 2022.
- Test Report N°22ATC081_EC-29, dated October 20, 2022.

4. APPLICATION / LIMITATION:

- 4.1 - BUREAU VERITAS Rules for the Classification of Steel Ships.
- 4.2 - BUREAU VERITAS Environmental Category, **EC Code: 31** for AXDIO128 and CATAX031800, **33** for AX030210.
- 4.3 - The equipment fulfils the EMC requirements for installation in General Power Distribution Zones.
- 4.4 - Approval also valid for ships to be granted with the notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**
- 4.5 - Only Hardware and Firmware / Software successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer are covered by this certificate.
- 4.6 - The AX030210 and CATAX031800 comply with the requirements of IACS E10 Rev.8.

5. PRODUCTION SURVEY REQUIREMENTS:

- 5.1 - The above products are to be supplied by **Axiomatic Technologies Corporation** in compliance with the type described in this certificate.
- 5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.
- 5.3 - **Axiomatic Technologies Corporation** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.
- 5.4 - For information, **Axiomatic Technologies Corporation** has declared to Bureau Veritas the following production site:

Axiomatic Technologies Corporation
1445 Courtneypark Drive E,
L5T 2E3 Mississauga, ON
CANADA

6. MARKING OF PRODUCT:

- 6.1 - Trade name.
- 6.2 - Date of manufacture and serial number.
- 6.3 - Equipment type or model identification under which it was type-tested.

7. OTHERS:

- 7.1 - It is **Axiomatic Technologies Corporation's** responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.
- 7.2 - This certificate supersedes the Type Approval Certificate No. 31049/B1 BV issued on 18 Dec 2019 by the Society.

*** END OF CERTIFICATE ***